

Is social media peer-to-peer fundraising a curse or a blessing? Analysing the factors that affect the donation amount

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Abstract:

Private donations are a cornerstone of the non-governmental organization (NGO) sector. In recent years social media has become a widely used tool for community building and brand management, but donations tended to occur directly to the NGOs. Now, a new concept is merging social media and peer-to-peer fundraisers, such as birthday fundraisers. The online social networks are the link between initiators, donors and NGOs. We investigate whether this new development is a blessing for NGOs or whether there are hidden pitfalls. We use publicly available transactional data and an experiment conducted with a partner NGO. We find that while social media peer-to-peer fundraising brings in donations cheaply for NGOs, they have little control over the system. The initiator of a peer-to-peer fundraiser and how he/she engages with the fundraiser influence the amount donated strongly and the NGO has limited means with which to guide the initiator.

Keywords: Social Media, Non-Profit, Referrals

Track: Public Sector and Non-Profit Marketing

1 Introduction

70% of the income of Non-governmental organizations (NGOs) in the DACH region comes from private donations (Geue & Corcoran-Schliemann, 2019). Recently a new way to collect donations has started to emerge: Social media and peer-to-peer fundraising. Users of online social networks can now create a fundraiser on a special occasion for the cause of their choice. Birthday or marathon-sponsoring fundraisers have become a recurring presence on online social networks and are illustrated in Figure 1: The left side shows the decisions to make, when creating a fundraiser on Facebook, the right side shows such a fundraiser.

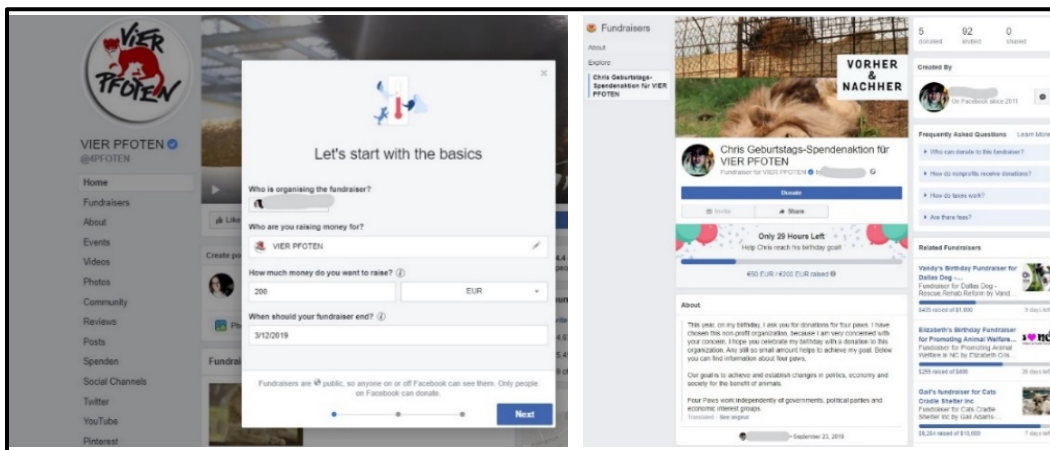


Figure 1: Starting a fundraiser and a fundraiser example

Social media peer-to-peer fundraising can be a blessing for NGOs as it increases their reach and is a cheap way to boost donations, but at the same time it might have hidden pitfalls. A new layer of separation is introduced between the NGO and the donor which might make it difficult for the NGO to engage donors. Further, the NGO is locked into the system of the online social network and this severely limits the knowledge it can gain on donors and the options through which to influence the outcome of such peer-to-peer fundraisers.

We aim to shed light into this topic by researching the factors that influence the amount donated to social media peer-to-peer fundraisers and determine the extent to which an NGO can influence the outcomes. We approach the question from two sides. First, we look at transactional data, then we investigate the effect of concrete actions an NGO can take through a field experiment with a partner NGO.

2 Research Context and Literature Review

The concrete context of this project are the giving tools on Facebook. Users can create fundraisers for an NGO of their choice that has activated the Facebook giving tools. During

the creation process Facebook suggests standard parameters for the fundraiser, like the privacy settings, fundraiser goal and fundraiser duration, but the initiator is free to change these. Once the fundraiser is started the initiator or his/her friends can share it and invite people to donate to it. The NGO for whose benefit the fundraiser was created, can also post inside the fundraiser but cannot promote it publicly.

There exists a large body of literature on the motivations behind donations. Andreoni and Payne (2013) distinguish between two types of donors: pure altruists and warm glow donors. Pure altruists are driven to donate because of a drive to optimize public good, while warm glow donors are motivated by more individualistic reasons. They want the prestige associated with giving (Harbaugh, 1998) or the emotional satisfaction of having helped (Wang & Tong, 2015). This second type of donations tends to occur when small amounts are given rather impulsively (Andreoni & Payne, 2013). We believe that while the basic motivations for donating will not be influenced by the new system, the ways in which an NGO can engage donors does. Further, we presume the fundraiser initiator will play an important role in the entire process, which is why understanding how an online social network works is key.

The power of online social networks to strengthen consumer-brand relationships and word of mouth communications has been intensively discussed for the for-profit world (Hudson, Huang, Roth, & Madden, 2015). In the NGO world the topic has also received some attention. Haruvy and Popkowski Leszczyc (2018) find that liking the Facebook page of an NGO leads to an increased propensity to donate for it in an auction context. Further, liking leads to social contagion just like in the for-profit context. On the other hand, NGOs seem to encounter the issue of “slacktivism” on social media with users only willing to perform actions requiring only minimal personal effort. Thus converting likes into donations or initiations of fundraisers could be a challenge for NGOs (Saxton & Wang, 2014).

Despite these insights, peer-to-peer fundraising is not well understood. Research on peer-to-peer solicitation, a similar mechanism, found that activating initiators might be expensive and not very fruitful (Castillo, Petrie, & Wardell, 2014). In addition, the work on referrals in the for-profit world might also be related to peer-to-peer fundraisers. Past research determined that referred customers in friends recommend friends programs are more loyal and have a higher customer lifetime value (Schmitt, Skiera, & Van den Bulte, 2011). Whether these results translate to peer-to-peer fundraisers is not clear.

3 Transactional Data

Using publicly available data on Facebook fundraisers, we study the market landscape in the past two years and the factors, which drive the amount donated to a fundraiser.

3.1 Data collection and preparation

In accordance with Facebook's Automated Data Collection Terms, we semi-manually collected publicly available data on the 50 largest German NGOs and their fundraisers. Fundraisers are displayed on the condition that they have collected 50\$ or more. The NGOs were selected from the list of the "Deutsches Zentralinstitut für soziale Fragen" (DZI) according to donation volume in 2017 (Wilke, 2019). In the foreseeable future, we plan to extend the data collection to US NGOs.

After simple data cleaning, we enrich our data by determining the gender of the fundraiser initiators. For this we use a database by the National Records of Scotland with the top 100 baby names from 1974 to 2018 listed by year (2019). Names listed for both genders are assigned the gender for which they are listed most often.

3.2 Market landscape

All 50 NGOs have a Facebook page. On average an NGO has 82 thousand subscribers, ranging between 7.6 thousand and 1.8 million subscribers. By default, each subscriber automatically also likes the NGO. When looking at the number of photos posted per NGO, we find a large spread as well, where NGOs with a larger number of subscribers also tend to have more photos posted than those with few subscribers. We can also observe this in the number of offline visits logged by users. Another publicly available information is the rating given to an NGO by Facebook users. We find an average rating of 2.6 out of 5, which is independent from the number of reviews.

27 NGOs had the fundraiser option activated. 2,630 fundraisers had been completed between the 1st of July 2017 and the 31st of October 2019. 422,000€ have been donated by 16,000 donors. Over time, the number of fundraisers per week constantly increases ($y=0.07x$), while the amount donated to a fundraiser stayed stable. The mean amount donated is 160€ and the maximum 12,000€. A median of 91€ indicates that the distribution of the amount donated is left-skewed. On average, a fundraiser has 6 donors. Over 75% of initiators used the default donation goal of 200€ this implies the majority of fundraisers do not reach their goal. Only 25% of the fundraisers are shared which indicates a low engagement of initiators and donors

with the fundraiser. However, invites are sent out selectively and not too all friends in a network. On average about 100 invites are sent out per fundraiser, whereas the average number of Facebook friends is about 300.

3.3 Factors affecting the amount donated to a fundraiser

Next, we analyze the factors that influence the amount donated using an ordinary least squares (OLS) regression. To mitigate heteroscedasticity issues that might arise through the left-skewed dependent variable (i.e., amount donated), we take its logarithm and use the Goldfeld-Quandt test to confirm that the null hypothesis for homoscedasticity is not rejected ($p=0.400$) (Backhaus, Erichson, Plinke, & Weiber, 2000). We also tested for multicollinearity issues using the variation inflation factor (VIF) (Backhaus et al., 2000).

We use three regression models to analyze the factors influencing the amount donated and report the preliminary results in Table 1. Thereby, we separately analyze the factors that are associated with the NGO and the fundraisers and finally study them jointly. The coefficients presented here have already been transformed according to Lin, Lucas and Shmueli (2013) to reflect the real change in the dependent variable.

Variables	Model 1: NGO factors	Model 2: Fundraiser factors	Model 3: All factors
Constant	10400 (0.016) ***	8820 (0.042) ***	8840 (0.044) ***
NGO photos (in 1000s of photos)	30.3 (0.080) ***		22.9 (0.077) ***
NGO video header	-48.1 (0.246) ***		2.25 (0.211)
NGO rating	6.46 (0.045)		-8.74 (0.043) **
NGO cause: Environmental and animal protection	-1.33 (0.020)		3.37 (0.019) *
NGO cause: Health	-64.5 (0.296) ***		-51.0 (0.262) ***
NGO cause: Others	2.97 (0.213)		2.77 (0.204)
NGO cause: Social services	394 (0.435) ***		-13.9 (0.431)
NGO cause: International and development aid (reference)	0.00 (0.000)		0.00 (0.000)
Shares		0.924 (0.001) ***	0.934 (0.001) ***
Invites		0.020 (0.000) ***	0.020 (0.000) ***
Is birthday fundraiser		-11.3 (0.035) ***	-11.1 (0.036) ***
Female initiator		0.341 (0.028)	1.21 (0.028)
Delta between start date and today		0.250 (0.001) ***	0.240 (0.001) ***
Goal above standard		113 (0.038) ***	108 (0.039) ***
Goal below standard		-4.42 (0.033)	-5.11 (0.033)
Default goal (reference)		0.00 (0.000)	0.00 (0.000)
R-squared	0.032	0.265	0.271
N	2627	2627	2627
Dependent variable	Logarithm of amount donated	Logarithm of amount donated	Logarithm of amount donated
Additional variables: NGO likes, NGO subscribers, NGO reviews, NGO date created, NGO founding date, Logarithm of Goal, NGO visits			
Note: Significance level $\alpha = 0.01 \rightarrow$ ***, $\alpha = 0.05 \rightarrow$ **, $\alpha = 0.1 \rightarrow$ *			

Table 1: OLS Regression results transactional data

The amount donated is largely driven by the observable factors of the fundraisers and not the NGO according to the R-squared of Model 1 (0.032) vs. Model 2 (0.265). It indicates that to increase the amount donated to peer-to-peer fundraisers on social media, the NGOs

marketing should focus on the fundraiser aspect and that they cannot rely on their general presence on Facebook to drive the fundraisers. In addition, as 3.2 already suggested, the amount donated to a fundraiser has not varied over time, this suggests, that the market is not saturated yet and NGOs do not need to compete for donors with each other.

According to Model 3 a 1-point drop in rating decreases donations to a fundraiser by 8.7€ This relationship suggests that donations to peer-to-peer fundraisers are driven by warm glow motivations. The rating of an NGO gives information on the quality of the work of the NGO as perceived by Facebook users, which is not objective. Reviews by users of social networks are often emotionally driven and contain strong emotional language (Felbermayr & Nanopoulos, 2016). We also see that the cause which an NGO supports is key to the amount donated. According to Model 1 and Model 3 being an environmental and animal protection organization significantly, negatively affects the amount donated by 51€ compared to the reference (International and development aid). This matches results from practitioner studies that have found that in general under 10% of donation go to environmental causes, but close to 60% to international aid (Geue & Corcoran-Schliemann, 2019).

A fundraiser with a higher campaign goal than the standard tends to obtain a higher amount donated (factor 100), decreasing the goal is not statistically significant. We cannot rule out endogeneity concerns on this result. Non-birthday fundraiser (18.6%) raise 11€ more than birthday fundraisers. The number of shares and invites to a fundraiser have a significant effect on the amount donated, but the magnitude of the effect low is at 1€/share and 2¢/invite. The limited effect of a share could be linked with the way the Facebook algorithm publishes shared posts on timelines. The result for the invites, indicates that unlike expected, a direct ask to donate does not increase the donation probability (Yörük, 2009).

4 Experimental Data

Given the previous explanatory findings, the question arises, whether NGOs can develop strategies to increase the amount donated in social media peer-to-peer fundraising. They could try to either increase the number of fundraisers, the amount donated to each fundraiser, or both these elements. In the subsequent experiment, we concentrate on the second option.

We conducted the experiment in cooperation with one of the 50 largest German NGOs. Our aim was to increase the amount donated to a fundraiser by thanking the initiator for their engagement through a thank you post. An NGO can influence the fundraiser at the start, while

it is running and once it has ended. At each point its actions affect different aspects of the fundraiser. Before the start, the NGO can try to influence the rate of creation of a fundraiser. During the campaign, it can try to reactivate the engagement with the fundraiser to increase donations and finally at the end of the fundraiser it can try to motivate donors to engage themselves with the NGO over the longer term. The first point can be addressed through targeted advertising, which we will not consider here. In the experiment we focus on the two later points. Our tests consist of a systematic variation of posts inside the fundraisers at different points in time. With the restrictions placed by Facebook an NGO can only post inside a fundraiser, it cannot publicly promote it.

The team created these two types of posts and randomly assigned all fundraisers to one of the following conditions (for each type of test):

1. Thank you posts at the start and in the middle of the fundraiser [conditions: Start, middle, none]
2. Call-to-Action posts at the end of the fundraiser [conditions: Like Facebook page, visit website, subscribe to newsletter]

4.1 Data collection and preparation

The experiment started in August 2019 and is still running. So far 83 fundraisers have been treated and are finished. Every day we check, whether new fundraisers are added and randomly assign new ones to one of the three conditions. For every fundraiser we manually collect data on the initiator, like, relationship status and public posts in the last month. In addition, we use the profile picture of the initiator to determine his/her age range using the facial age determination method described by Rhodes (2009).

We use the same baby names database as for the transactional data to determine the gender of all non-anonymous donors to the fundraisers. For the regression, we dummy coded the gender with the male gender as a reference and effect coded the age ranges with the bracket of 30 to 39 years as a reference (Backhaus et al., 2000). Furthermore, several auxiliary variables, like fundraiser duration were calculated.

4.2 General analysis

We start by analyzing the factors that an initiator can influence. Like in the transactional data, initiators rarely alter the fundraiser goal. Fundraiser duration and the text describing the fundraiser are unchanged in over 65% of the cases. Again, upping the goal increases the

amount donated to a fundraiser, although this is not statistically significant ($p > .1$). Changing the duration of the fundraiser in either direction decreases the amount donated to the fundraiser, increasing the fundraiser length by one day could mean a drop in donations by 55€ This could be linked to an increase in procrastination of the donation (Damgaard & Gravert, 2016) . A higher percentage of female donors increases the amount donated to a fundraiser by 1€ per percentage point increase (reference: % male donors). While not statistically significant we find that a female initiator would increase the amount donated by 25€ in the experimental data set and by 1€ in the transactional data set. Women tend to donate more than men, especially when the donations are driven by emotions (Mesch, Brown, Moore, & Hayat, 2011). A further driver of this effect could be that women are also more active than men on social media (Kimbrough, Guadagnob, Muscanell, & Dill, 2013).

According to past research and practitioners, donation probability increases with age (Geue & Corcoran-Schliemann, 2019). Online social networks do not attract the age group over 60 that majorly drive overall donations (Geue & Corcoran-Schliemann, 2019). We find that in our context initiators between 40 and 49 years create fundraisers with the largest amounts donated, 92€ more than the reference group (30 – 39 years). In sum this confirms the previous results: It is mainly the initiator that influences the amount donated. Now we look at the power the NGO has.

4.3 Analysis of the effect of the tests

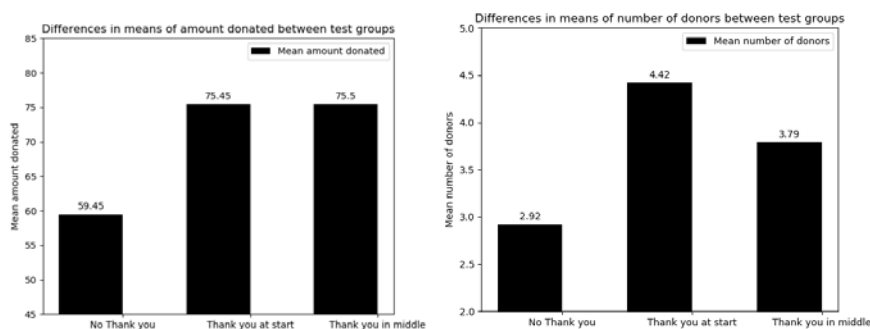


Figure 2: Mean amount donated and mean number of donors for the different thank you posts

Figure 2 plots the mean amount donated and mean number of donors over the three test groups of the thank you test. There is a difference of 15 € in the amount donated between no thank you and a thank you, and the mean number of donors also rises in fundraisers where a thank you was posted. A thank you at the start of the fundraiser increases the amount donated by 15€ on average and 26€ as predicted by our regression model. Yet, the differences are not significant, potentially due to the low number of observations. As this experiment continues,

we refrain from making a conclusion. Nevertheless, a thank-you post might have the potential to positively impact the amount donated.

Finally, we received no reaction at all to our Call-to-Action. So far, the Call-to-Action posts have not affected the rate of subscription to the NGOs Facebook page or its newsletter or caused any visits to its website. Several factors could play a role in this. As Castillo, Petrie and Wardell (2014) found, nuisance costs tend to be high the in the donation context. Exiting the Facebook environment to visit an external website might be a nuisance for donors. This observation supports that donors are mainly motivated to donate by prestige and impulse and not because of the value in the recommendation of their friend. Consequently, in contrast to the referral literature in the for-profit world (Schmitt et al., 2011), donors probably do not have a high customer lifetime value for the NGO.

5 Conclusion

Our results indicate that the amount donated in a social media peer-to-peer fundraiser is largely driven by factors controlled by the initiator or his/her traits. The NGOs might have the potential to increase the amount donated to a fundraiser to some degree by posting inside the fundraiser during its runtime. Posts to engage donors post runtime, on the other hand, do not seem to yield a positive return on investment.

Consequently, at this point it does seem that social media peer-to-peer fundraising is not a pure blessing for an NGO. It is very reliant on the initiator and the online social network's algorithms and has little power to control the outcome. If peer-to-peer fundraising were to gain further importance, as it seems to be doing, this could make the NGO vulnerable to high, uncontrollable, variations in income. If it cannibalizes other, more stable, income sources like monthly pledges it could even turn into more of a curse. Of course, we should not forget that right now social media peer-to-peer fundraising is still increasing the overall income of NGOs a little, which makes it at least a mixed blessing.

The results presented here are preliminary, we plan to add a survey to this study to investigate the motives of an initiator when creating a fundraiser and how an NGO can best motivate them. Furthermore, the transactional data is to be extended by adding the top 100 US NGOs to the data set. Tests to determine the power of targeted advertisement in increasing fundraiser volume will also be conducted.

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